

What is claimed is:

1. A device for thermally affecting tissue in a patient comprising:  
  
a housing including a first end region and a second end region, the second end region containing a fluid inlet and a fluid outlet, the housing being securable to a boney structure of the patient; and  
  
an expandable element including a wall defining an inner volume and a tissue contacting surface, the expandable element being coupled to the housing first end region such that the inner volume is in fluid communication with the fluid inlet and the fluid outlet.
2. The device for thermally affecting tissue in a patient according to claim 1, wherein the housing further includes a threaded portion about the housing first end region.
3. The device for thermally affecting tissue in a patient according to claim 1, wherein the expandable element is a balloon.
4. The device for thermally affecting tissue in a patient according to claim 1, wherein the tissue contacting surface is substantially concave.
5. The device for thermally affecting tissue in a patient according to claim 1, wherein the tissue contacting surface is substantially flat.
6. The device for thermally affecting tissue in a patient according to claim 1, wherein the tissue contacting surface substantially conforms to the tissue being treated.

7. The device for thermally affecting tissue in a patient according to claim 1, wherein the expandable element is made from a resilient material.
8. The device for thermally affecting tissue in a patient according to claim 1, wherein the expandable element is made from a conformable material.
9. The device for thermally affecting tissue in a patient according to claim 1, wherein the expandable element is substantially conical in shape.
10. The device for thermally affecting tissue in a patient according to claim 1, wherein the expandable element has a shape selected from the group consisting of cylindrical, bell, and conical.
11. The device for thermally affecting tissue in a patient according to claim 1, further comprising a low pressure thermally conductive fluid control system operably connected to the housing fluid inlet and the housing fluid outlet.
12. A device for thermally affecting tissue in a patient comprising:
  - a housing including a first end region and a second end region, the second end region containing a fluid inlet and a fluid outlet, and the first end region containing a threaded portion such that the housing is securable to a boney structure of the patient;

an expandable element including a wall defining an inner volume and a tissue contacting surface, the expandable element being coupled to the housing first end region such that the inner volume is in fluid communication with the housing fluid inlet and the housing fluid outlet; and

a low pressure thermally conductive fluid control system operably connected to the housing fluid inlet and the housing fluid outlet.

13. The device for thermally affecting tissue in a patient according to claim 12, wherein the expandable element is a balloon.

14. The device for thermally affecting tissue in a patient according to claim 12, wherein the tissue contacting surface is substantially concave.

15. The device for thermally affecting tissue in a patient according to claim 12, wherein the tissue contacting surface is substantially flat.

16. The device for thermally affecting tissue in a patient according to claim 12, wherein the tissue contacting surface substantially conforms to the tissue being treated.

17. The device for thermally affecting tissue in a patient according to claim 12, wherein the expandable element is made from a resilient material.

18. The device for thermally affecting tissue in a patient according to claim 12, wherein the expandable element is made from a conformable material.

19. The device for thermally affecting tissue in a patient according to claim 12, wherein the expandable element is substantially conical in shape.

20. A device for thermally affecting tissue in a patient comprising:

a housing including a first end region and a second end region, the second end region containing a fluid inlet and a fluid outlet, and a means for securing the housing to a boney structure of the patient; and

an expandable element including a wall defining an inner volume and a tissue contacting surface, the expandable element being coupled to the housing first end region such that the inner volume is in fluid communication with the housing fluid inlet and the housing fluid outlet; and a low pressure thermally conductive fluid control system operably connected to the housing fluid inlet and the housing fluid outlet.

21. A method of using an expandable element to affect a thermal energy change in tissue of a patient's body, comprising:

- a) creating a burr hole in the patient's skull;
- b) securing a housing within the burr hole, such that the expandable element is positioned between the boney structure and the tissue to be treated; and
- c) infusing a low pressure thermally conductive fluid into the expandable element.

22. The method of using an expandable element to affect a thermal energy change in dura tissue of a patient's brain according to claim 21, further comprising securing the housing to the boney structure of the skull.